NEW APPLICATION

ADOT
Intermodal Transportation

June 17, 2015

Arizona Corporation Commission
Office of Railroad Safety
Attn: Chris Watson
1200 W Washington Street
Phoenix, AZ 85007

RR-03639A-15-0200

RE: APPLICATION TO INSTALL A NEW GRADE SEPARATED CROSSING AND REMOVE AN EXISTING PUBLIC AT-GRADE CROSSING

Project: RECONSTRUCT INA ROAD TRAFFIC INTERCHANGE
Location: Interstate 10 (MP 247.1 to MP 248.9) and Ina Road (City of Tucson & Pima County, Arizona)
Federal Project # NH -010-D (216) S
ADOT Tracs # 010 PM 248 H847901D
Remove crossing AAR/DOT # 741101G
Install new overpass crossing

ORIGINAL

Mr. Watson,

This application is being submitted to allow the Arizona Department of Transportation (ADOT) to construct and maintain a new grade separated structure and to allow the Union Pacific Railroad (UPRR) to remove an existing at-grade public crossing in the Town of Marana, Arizona.

1. **Project Location and Description**
   The new Ina Road traffic overpass will be located in approximately the same location as the existing Ina Road at-grade crossing, AAR/DOT #741101G. This overpass is part of the Interstate 10, Ina Road Traffic Interchange project for the Arizona Department of Transportation (ADOT). The entire project is located in Tucson, Arizona.

   The project consists of reconstructing Interstate 10 (I-10) from 0.9 miles east (south) of Ina Road to 0.9 miles west (north) of Ina Road. As part of this project, I-10 will be lowered to ground level and widened to eight lanes of travel and Ina Road will be elevated over I-10, UPRR right-of-way, and Camino de Oeste, a local Town of Marana street. Ina Road will be reconstructed to a six-lane facility with turn lanes, bicycle lanes, and sidewalks. This configuration will allow for the removal of the existing at-grade crossing on Ina Road while maintaining access to/from I-10.

   Additional improvements that will be completed as part of this project within Union Pacific Railroad include pier construction for the overpass bridge construction, drainage (storm drain) improvements, and utility relocations.

   The existing at-grade crossing is under the jurisdiction of the Town of Marana, but will be transferred to ADOT in the near future. A Town resolution in support of removing the at-grade crossing will be obtained and included as part of the executed ADOT/UPRR Construction & Maintenance Agreement.

The entire project is anticipated to be advertised by the summer of 2016, with construction starting in the fall/winter of 2016. Construction is anticipated to take 24 months. Ina Road within the limits of the Union Pacific Railroad at-grade crossing and I-10 will be closed throughout the majority of construction timeframe. The at-grade crossing may be used by construction traffic until the new overpass is complete. To facilitate construction activities to either side of the at-grade crossing, ADOT is requesting that the UPRR be allowed a minimum of 36 months to remove the at-grade crossing after issuing the order.

The project website is: http://www.azdot.gov/projects/south-central/i-10-ina-road-ti-final-design

2. **Why the crossing is needed**
   The Design Concept Report entitled was completed by the Arizona Department of Transportation in May 2012. The report identified a new grade-separated crossing for Ina Road at I-10 and Union Pacific Railroad for the need to "eliminate vehicle conflicts with the Union Pacific Railroad's east-west main line tracks."

   The Design Concept Report can be accessed via the internet at:
   http://www.azdot.gov/docs/default-source/projects/design-concept-report.pdf?sfvrsn=0

3. **Construction Phasing**
   Construction is expected to start by the winter of 2016. Ina Road will be closed to the general traffic for the majority of the construction. During project construction traffic may continue to use the at-grade crossing until the overpass is completed. Once the overpass is completed and in service, the at-grade crossing can be removed. Our contractor will coordinate and receive approval from the Union Pacific Railroad to use the crossing during construction.

4. **Maintenance of the grade separated overpass**
   ADOT will be responsible for constructing and maintaining the Ina Road Overpass over the Union Pacific Railroad right-of-way. Union Pacific Railroad will be responsible for removing the at-grade crossing and maintaining their infrastructure.

5. **Project Funding**
   The project is funded by the Federal Highway Administration, the City of Tucson, the City of Marana, Pima Association of Governments and Arizona Department of Transportation.

   This project will be advertised in the summer of 2016 and is estimated to cost approximately $120M with the Ina Road overpass over the Union Pacific Railroad estimated to cost $7.4M. This cost does not include the interchange between Prince Road and Interstate 10.

   The Union Pacific Railroad contribution to the project has not been finalized. The costs for the relocation of railroad signal lines and the removal of the Ina Road at-grade railroad crossing will be the responsibility of Union Pacific Railroad.

6. Other information (based on typical Staff Data Requests):
   - CW1-1 2009 ADT for Ina Road – West of I-10: 15,100vpd; East of I-10: 31,700vpd
   - CW1-2 2009 Intersection LOS (EB/WB): Ina Road/West Frontage Road – E/B; Ina Road/East Frontage Road – A/C

CW1-3 Past Traffic Studies: A corridor study for improving I-10 from Tangerine Road to I-19 was completed in 1997. Design Concept Report for Ina Road Traffic Interchange was completed in May 2012. Copy of the Design Concept Report is available on ADOT website.

CW1-4 Population: 2009 estimated population of Tucson is 543,910 persons

CW1-5 Existing Railroad Safety Devices: Ina Road at-grade crossing is currently protected by cantilevered flashing lights and gates for both directions of travel on Ina Road and the right turn lane from westbound I-10 Frontage Road.

CW1-6 Adjacent Public Crossings: The nearest public crossings of the Union Pacific Railroad are as follows: (1) Massingale Road (DOT #741100A); 0.6 miles to the northwest of Ina Road and is at-grade; (2) Orange Grove Road (DOT #748175X), 1.3 miles to the southeast of Ina Road and is grade separated; (3) Cortaro Road (DOT # 741098B), 2.0 miles to the northwest of Ina Road and is at-grade.

CW1-7 Grade Separation Study: Design Concept Report entitled *Ina Road Traffic Interchange to Ruthrauff Road Traffic Interchange* (dated May 2012) identified grade-separation of Ina Road and Union Pacific Railroad.

CW1-8 Grade Separation Cost: Cost of Entire project provided above.

CW1-9 Surrounding Zoning: Surrounding area is zoned for Light Industrial and Village Commercial (source: Pima County)

CW1-10 Existing Train Movements: Per FRA website based on 1994 information, 25 freight and 2 passenger trains per day. UPRR expects 84 trains per day by 2016. All train movements are thru movements.

CW1-11 Nearest Schools: (1) Charter School - PPEP Tec, John David Arnold Learning Center: 0.7 miles east of crossing (4140 West Ina Road); (2) Marana Unified School District – Thornydale Elementary School: 0.8 miles northeast of crossing (7651 North Old father Drive); (3) Marana Unified School District – Coyote Trail Elementary School: 2.8 miles northwest of crossing (8000 North Silverbell Road; (4) Flowing Wells Unified School District – Richardson Elementary School: 1.6 miles southeast of crossing (6901 North Camino de la Tierra)

CW1-12 Nearest Hospitals: (1) Northwest Hospital: 3.2 miles from crossing (6200 North LaCholla Blvd) (1) Tucson Heart Hospital: 6.8 miles southeast of this crossing (4888 N Stone); (3) St. Mary Hospital: 8.5 miles south of this crossing (1601 St. Mary Road)

CW1-13 Railroad Costs: To be determined

CW1-14 Hazardous Materials traffic: It is not known how much hazardous materials traffic uses the existing crossing each day.

CW1-15 Speed Limit: Ina Road has a posted speed limit of 45 mph.

CW1-16 Other bus use: Unknown.

CW1-17 Abandoned Railroad Spurs: Unknown if railroad spurs have been removed within a 10 mile radius.

CW1-18 Summary of FHWA grade separation guidelines: Does not apply. This crossing will be grade separated.

CW1-19 Expected traffic delay due to train traffic: Does not apply. This crossing will be grade separated.

Sincerely,

Sayeed M. Hani
Utility Engineering Coordinator/ Railroad Liaison
205 S 17TH AVE MD 618E
PHOENIX, AZ 85007
602.712.7555
Shani@azdot.gov
ADOT
Intermodal Transportation

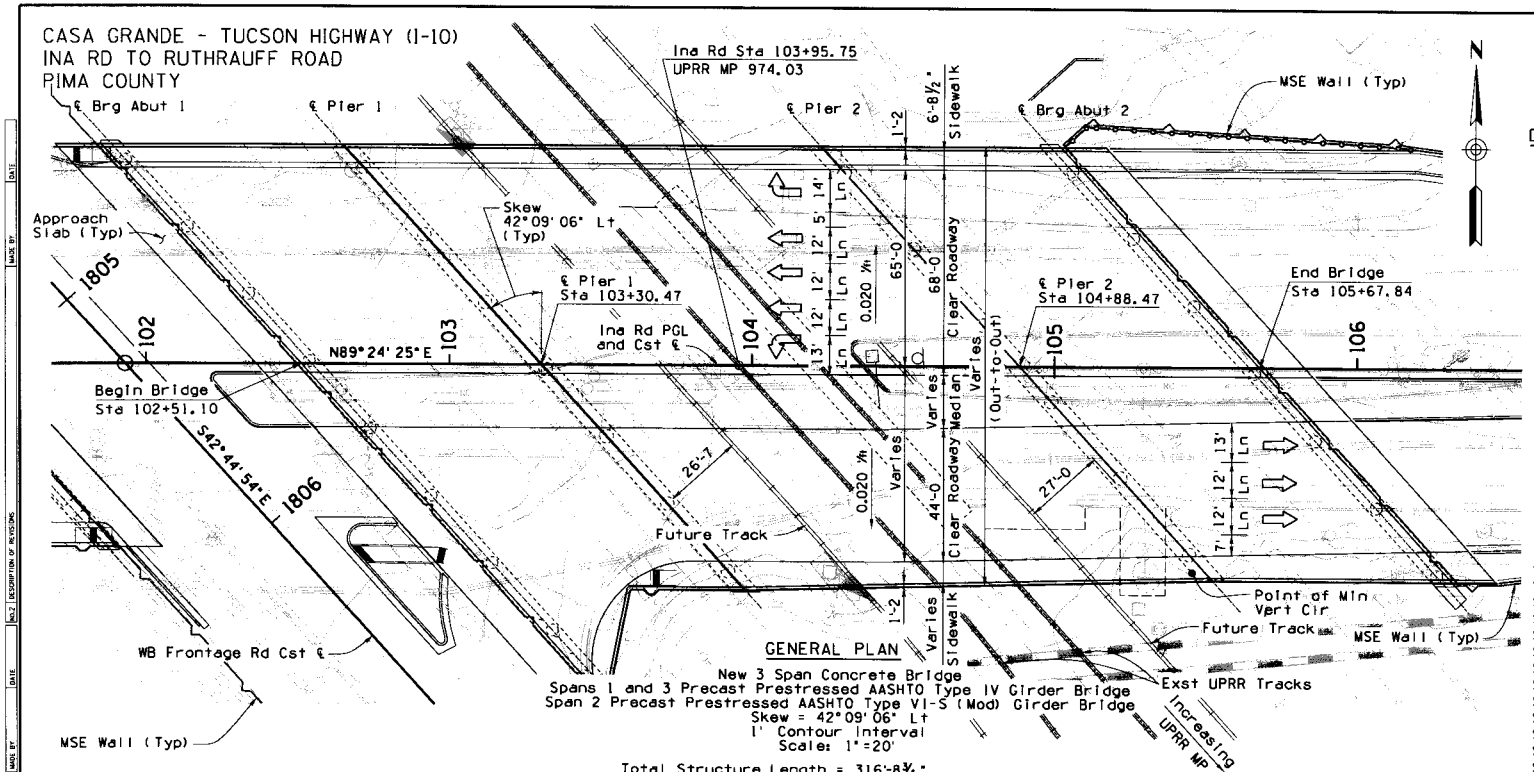
CASA GRANDE - TUCSON HIGHWAY (I-10)
INA RD TO RUTHRAUFF ROAD
PIMA COUNTY

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(216)T	573	749	
		010 PM 247			

INDEX OF DRAWINGS

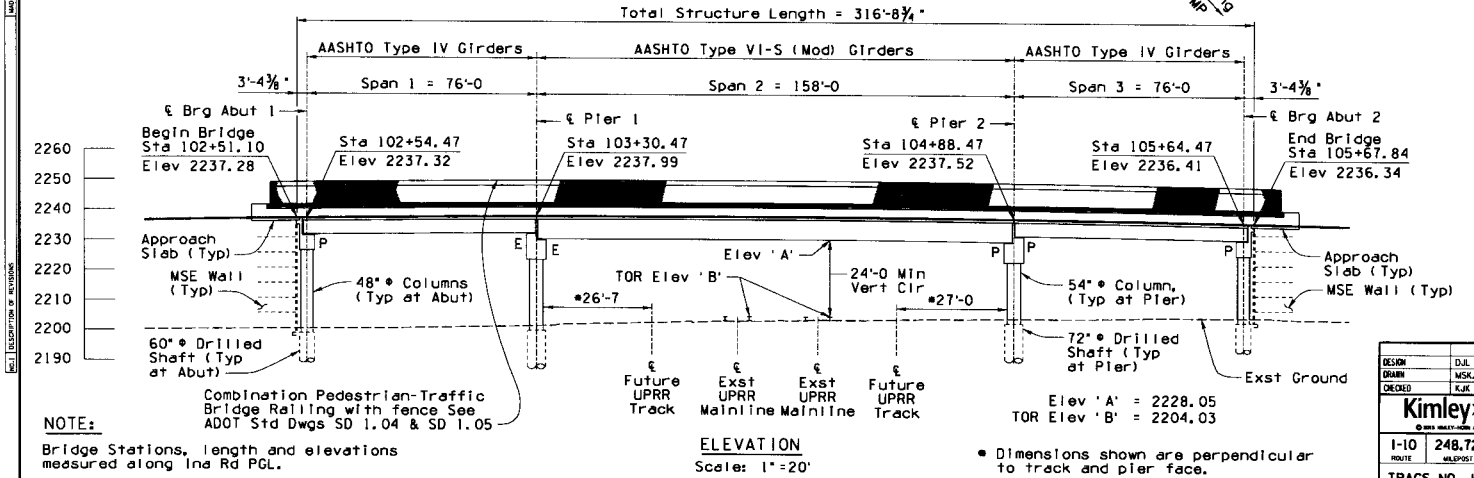
**SF-2.01
- SF-2.xx FOUNDATION DATA SHEETS

** Not included at this stage. To be included in subsequent submittals.



GENERAL PLAN

New 3 Span Concrete Bridge
Spans 1 and 3 Precast Prestressed AASHTO Type IV Girder Bridge
Span 2 Precast Prestressed AASHTO Type VI-S (Mod) Girder Bridge
Skew = 42°09'06" Lt
1' Contour Interval
Scale: 1"=20'



ELEVATION

Scale: 1"=20'

Elev 'A' = 2228.05
TOR Elev 'B' = 2204.03

* Dimensions shown are perpendicular to track and pier face.

NOTE:
Bridge Stations, length and elevations measured along Ina Rd PGL.

	NAME	DATE
DESIGN	DJL	04/15
DRAWN	MSK/BMM	04/15
CHECKED	KJK	04/15

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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
BRIDGE GROUP

STA 104+
INA RD/UPRR OVERPASS
GENERAL PLAN & ELEVATION

PRELIMINARY
STAGE IV
Review
NOT FOR CONSTRUCTION OR RECORDING

I-10	248.72	20095
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION: INA RD T.I.

DWG NO. S-2.01

TRACS NO. H 8479 01C | 010-D(216)T | ___ OF ___

6:51:24 AM 4/29/2015 BENJAMEN. MOULTON K:\PHX_ROADWAY\098205001-I 10 INA RD TI\CADD\03-SHEETS\UPRR\S20095GP01.DGN

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
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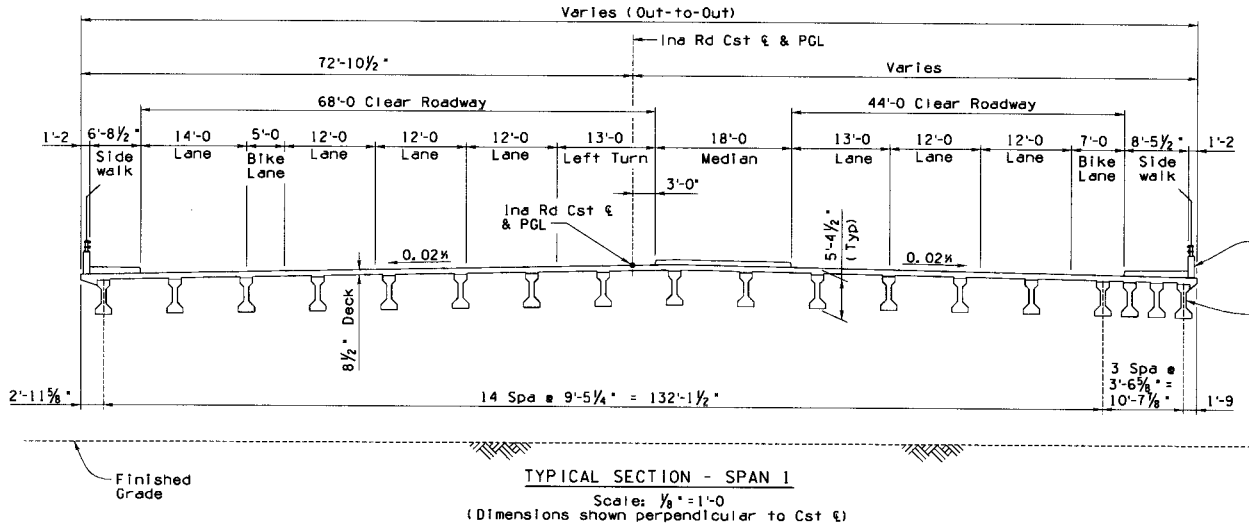
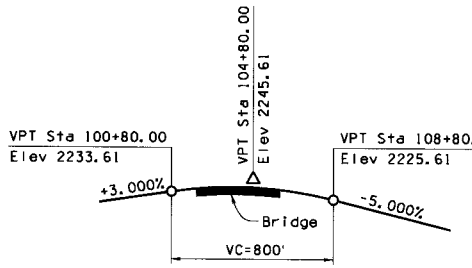
		010 PM 247			



TYPICAL SECTION - SPAN 1

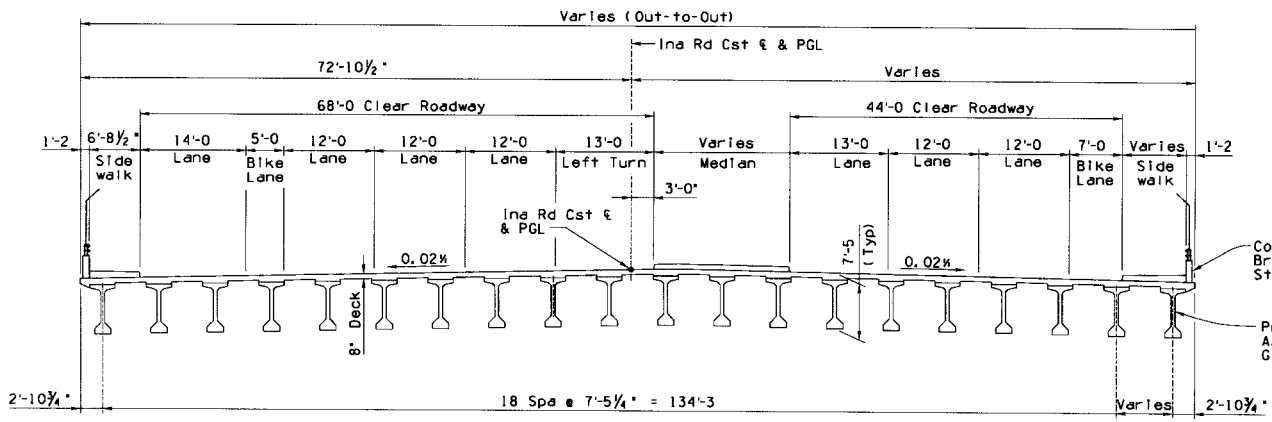
Scale: ⅛"=1'-0

(Dimensions shown perpendicular to Cst ℄)



INA RD PGL & CST ℄ PROFILE

Not to Scale



TYPICAL SECTION - SPAN 2

Scale: ⅛"=1'-0

(Dimensions shown perpendicular to Cst ℄)

	NAME	DATE
DESIGN	DJL	04/15
DRAWN	MSK/BMM	04/15
CHECKED	KJK	04/15

Kimley»Horn

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
BRIDGE GROUP

STA 104+
INA RD/UPRR OVERPASS
TYPICAL SECTIONS

I-10	248.72	20095
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION: INA RD T.I.

TRACS NO. H 8479 01C

010-D(216)T

PRELIMINARY
STAGE IV
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. S-2.02

___ OF ___

6:51:26 AM 4/29/2015 BENJAMEN.MOULTON K:\PHX_ROADWAY\098205201-I 10 INA RD TI\CADD\03-SHEETS\UPRR\S20095ND01.DGN

APPROXIMATE QUANTITIES

Item	Struct Excav	Struct Bkfill	Class "S" Concrete		Reinf Steel	Precast AASHTO TYPE V Mod Girders	Drilled Shaft 60" ⌀	Drilled Shaft 72" ⌀
			f'c=3500psi	f'c=4500psi				
	CY	CY	CY	CY	LBS	LF	LF	LF
Abutment 1								
Pier 1								
Pier 2								
Abutment 2								
Superstructure								
Total								
As-Built Total								

Deck Joint Assembly (3 x 3 Comp Seal)
(SD 3.01) . . . . . XXX LF
Approach Slab (SD 2.01) . . . . . 5063 SF
Combination Pedestrian-Traffic Bridge
Railing (SD 1.04) . . . . . 672 LF
Pedestrian Fence for Bridge Railing
(SD 1.05) . . . . . 672 LF
Restrainers, Fixed. . . . . XX EA
Restrainers, Expansion. . . . . XXX EA

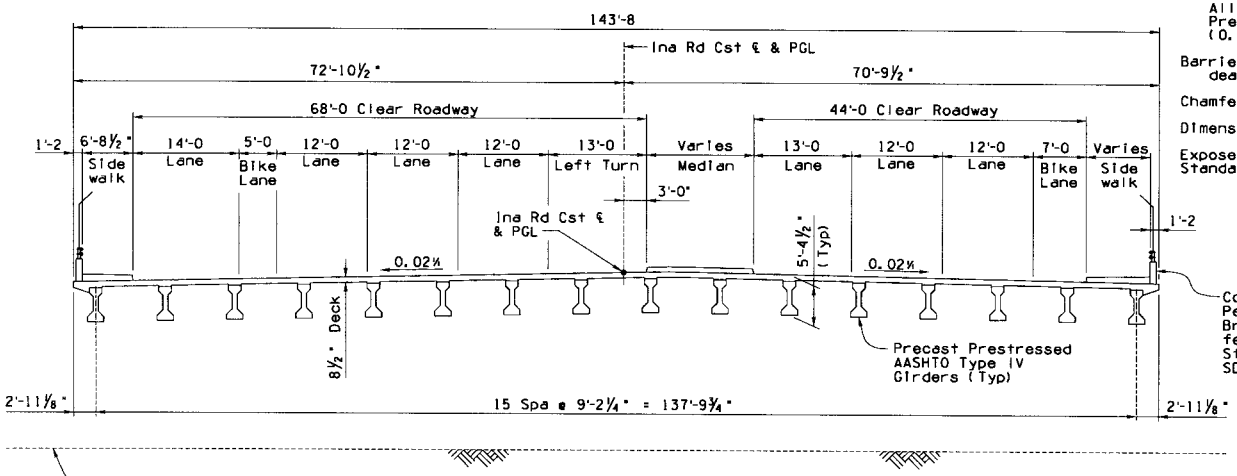
LEGEND:

DETAIL Marker — 1 / X.XX — Detail Number; Drawing Number

SECTION Marker — A / X.XX — Section Letter; Drawing Number

ADOT STRUCTURE DETAIL DRAWINGS:

SD 1.04, SD 1.05, SD 2.01,
SD 3.01, SD 5.01 & SD 5.02



TYPICAL SECTION - SPAN 3

Scale: ⅛" = 1'-0
(Dimensions shown perpendicular to Cst ℄)

GENERAL NOTES:

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(216)T	575	749	
		010 PM 247			

Construction Specification -
Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, Edition of 2008.

Design Specifications -
AASHTO Standard Specifications for Highway Bridges, 6th Edition, 2012.

Dead Load - Dead Load includes an allowance of 25 pounds per square foot for future wearing surface. The bridge design assumes a dead load of 15 pounds per square foot for stay-in-place deck forms.

Loading Class - HL-93.

The bridge site is classified as Site Class I with Peak Ground Acceleration (PGA) = 0.07. The bridge is assigned to Seismic Zone 1.

Inventory and operating ratings for HL-93 are in accordance with AASHTO Manual for Bridge Evaluation, 2nd Edition 2011 and the most current interims, in accordance with the Load and Resistance Factor Method.

Inventory Rating RF x.xx
Operating Rating RF x.xx

All concrete shall be Class 'S' unless noted otherwise.

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60.

All bends and hooks shall meet the requirements of AASHTO Article 5.10.2
All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

All mechanical splices shall conform to the requirements of mechanical connections in Section 605-3.02 of the Standard Specifications.

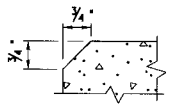
Strengths:
Superstructure (Deck, Diaphragms & Pier Diaphragms) . . f'c = 4.5 ksi
Barriers, sidewalks and median. . . . . f'c = 4.0 ksi
Abutments and Pier Columns. . . . . f'c = 3.5 ksi
Drilled Shafts. . . . . f'c = 3.5 ksi
All other Class 'S' Concrete . . . . . f'c = 3.0 ksi
Grade 60 Transverse Deck Reinforcing. . . . . fs = 24.0 ksi
All other Grade 60. . . . . fy = 60.0 ksi
Prestressing Steel. . . . . fpu = 270.0 ksi
(0.6" Dia 7-wire Low Relaxation Strand)

Barriers, sidewalk and median shall be constructed after spans have taken dead load deflection. Barriers shall not be slip formed.

Chamfer all exposed corners ¾" unless noted otherwise.

Dimensions shall not be scaled from drawings.

Exposed concrete surfaces shall be painted in accordance with the Standard Specifications and Special Provisions.



CHAMFER DETAIL
Not to Scale

ABBREVIATIONS:

NF = Near Face
FF = Fill Face
EF = Each Face

	NAME	DATE
DESIGN	D.M.	04/15
DRAWN	MSK/BMM	04/15
CHECKED	K.M.	04/15

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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
BRIDGE GROUP

STA 104+
INA RD/UPRR OVERPASS
GENERAL NOTES, QUANT. & TYP SEC.

ROUTE	MILEPOST	STRUCTURE NO.
I-10	248.72	20095

LOCATION: INA RD T.I.

TRACS NO. H 8479 01C

010-D(216)T

PRELIMINARY
STAGE IV
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. S-2.03

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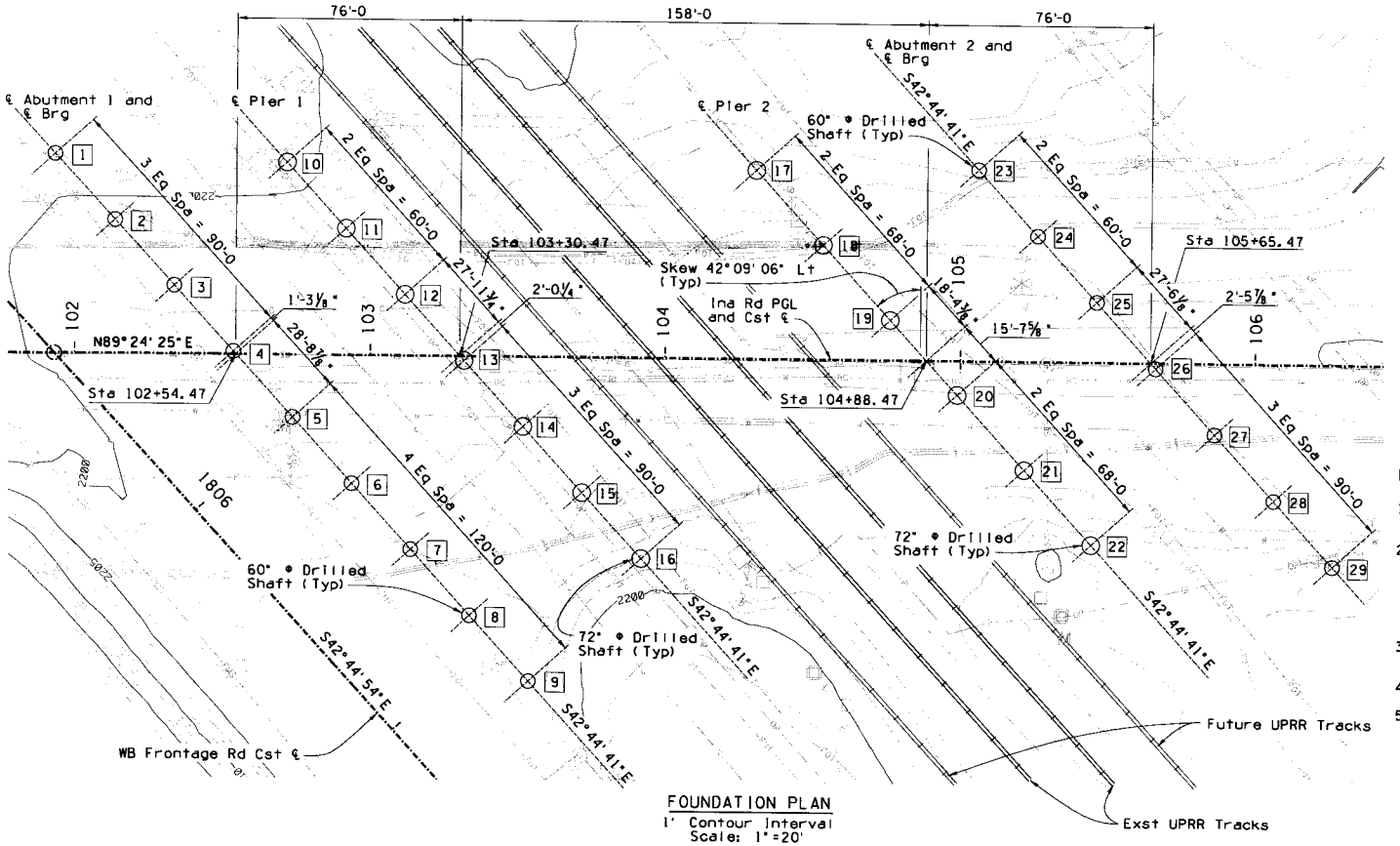
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(216)T	576	749	

010 PM 247



FOUNDATION PLAN
1' Contour Interval
Scale: 1"=20'

NOTES:

1. [1] indicates drilled shaft foundation identification number.
2. The Contractor shall select one 60" diameter drilled shaft as a confirmation shaft per Section 609 of the Standard Specifications. The selected shaft shall be indicated in the Contractor's drilled shaft installation plan.
3. For Project Geotechnical Information, See Report by xxxx, Inc dated x-x-xx.
4. See SF Drawings for Foundation Data.
5. Contractor shall submit a plan detailing the drilling construction procedures for approval in the Drilled Shaft Installation Plan prior to starting drilled shaft construction. Excavation of an adjacent drilled shaft will not be permitted until 48 hours after the adjacent drilled shaft has been poured. An adjacent shaft is any shaft within four diameters measured center to center.
6. Temporary Support of Steel Casing is the Contractors responsibility, and is considered included in the drilled shaft pay item.
7. Contractor shall provide steel casing, if needed, at no additional cost to the department.

Location of all existing utilities shown are approximate. Utilities to be removed are included in the Utility removal items. For Utilities to remain, it shall be the Contractor's responsibility to protect them in place.

	NAME	DATE
DESIGN	D.JL	04/15
DRAWN	MSK/BMM	04/15
CHECKED	K.JK	04/15

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ROUTE	MILEPOST	STRUCTURE NO.
I-10	248.72	20095

TRACS NO. H 8479 01C

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
BRIDGE GROUP

STA 104+
INA RD/UPRR OVERPASS
FOUNDATION PLAN

LOCATION: INA RD T.I.

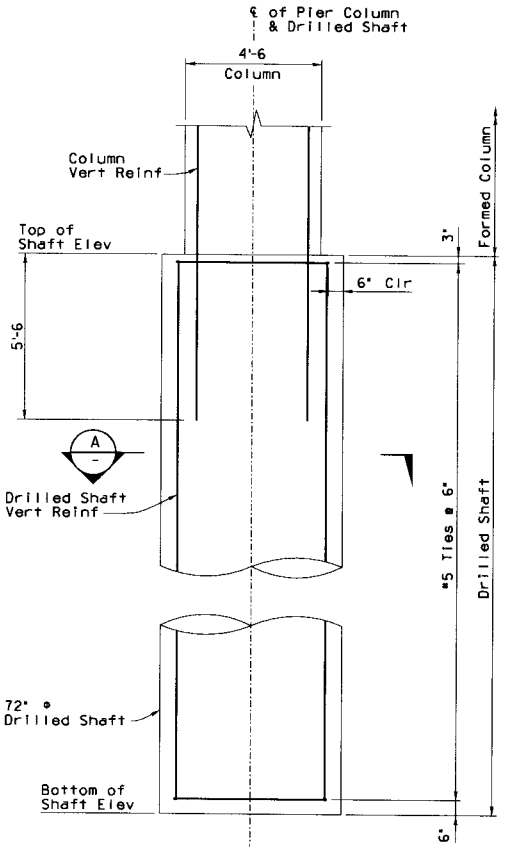
010-D(216)T

PRELIMINARY
STAGE IV
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG NO.S-2.04

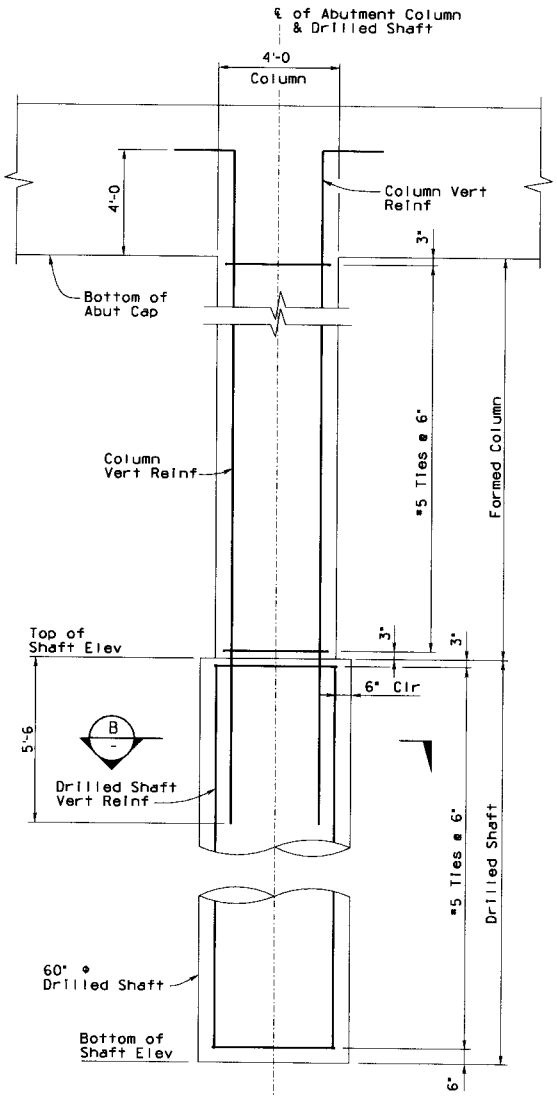
___ OF ___

6:51:47 AM 4/29/2015 BENJAMEN.MOULTON K:\PHX_ROADWAY\098205001-I 10 INA RD TI\CADD\03-SHEETS\UPRR\S20095FL01.DGN



PIER DRILLED SHAFT DETAIL

Scale: ½" = 1'-0



ABUTMENT DRILLED SHAFT DETAIL

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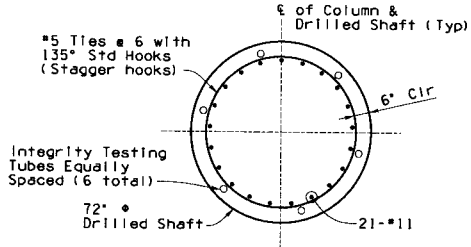
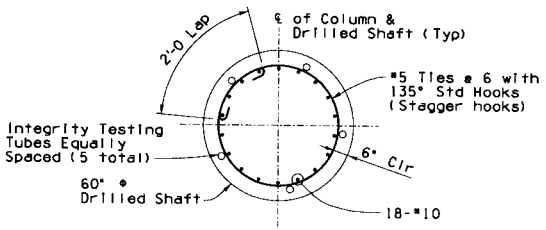


SECTION A - Scale: ½" = 1'-0



SECTION B - Scale: ½" = 1'-0

DRILLED SHAFT NOTE:

1. See Foundation Plan S-2.04 for additional notes.

	Top of Shaft	Bottom of Shaft	Shaft Diameter	Capacity
Abutment 1	2199.00	2119.00	60"	xxx Kips
Pier 1	2199.00	2099.00	72"	xxx Kips
Pier 2	2203.00	2103.00	72"	xxx Kips
Abutment 2	2203.00	2123.00	60"	xxx Kips

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(216)T	577	749	
		010 PM 247			

NO.	DESCRIPTION OF REVISIONS	DATE	MADE BY

	NAME	DATE
DESIGN	D.JL	04/15
DRAWN	MSK/BMM	04/15
CHECKED	K.JK	04/15

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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
BRIDGE GROUP

STA 104+
INA RD/UPRR OVERPASS
DRILLED SHAFT DETAILS

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	248.72	20095	INA RD T.I.

TRACS NO. H 8479 01C

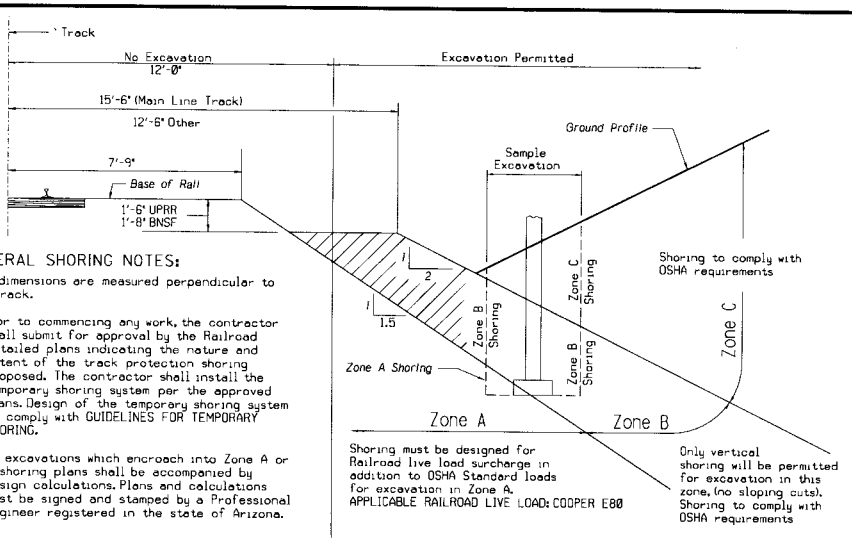
010-D(216)T

PRELIMINARY
STAGE IV
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. S-2.05

OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(216)T	623	749	
		010 PM 247			



GENERAL EXCAVATION ZONES

GENERAL SHORING NOTES:

1. All dimensions are measured perpendicular to ℄ Track.
2. Prior to commencing any work, the contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system to comply with GUIDELINES FOR TEMPORARY SHORING.
3. For excavations which encroach into Zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the state of Arizona.

RAILROAD GENERAL NOTES:

1. Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.
2. The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the Railroad's ditches and/or drainage structures.
3. The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.
4. The contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad.
5. All shoring systems that impact the Railroad's operations and/or supports the Railroad's embankment shall be designed and constructed per current Railroad Guidelines for Temporary Shoring.
6. All demolitions within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operations shall be in compliance with the Railroad's Demolition Guidelines.
7. Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements.
8. All construction phasing that may impact the Railroad operations shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements.
9. False-work clearances shall comply with minimum construction clearances.
10. All permanent clearances shall be verified before project closing.
11. For Railroad coordination please refer to the Railroad Coordination Requirements as part of special provisions.

EXST EAST TRACK TOP OF RAIL ELEVATIONS

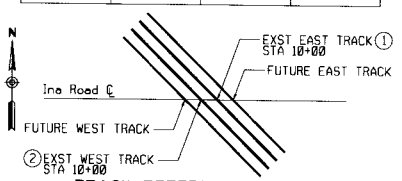
(STATIONS INCREASE WITH MILEPOST INCREASE)

MAIN LINE			
ALIGNMENT: LEFT RAIL		ALIGNMENT: RIGHT RAIL	
STATION	ELEVATION	STATION	ELEVATION
4+00	2200.20	4+00	2200.15
5+00	2200.74	5+00	2200.70
6+00	2201.29	6+00	2201.27
7+00	2201.91	7+00	2201.88
8+00	2202.49	8+00	2202.46
9+00	2203.00	9+00	2203.01
①10+00	2203.85	①10+00	2203.85
11+00	2204.39	11+00	2204.39
12+00	2205.06	12+00	2205.03
13+00	2205.67	13+00	2205.64
14+00	2206.32	14+00	2206.29

EXST WEST TRACK TOP OF RAIL ELEVATIONS

(STATIONS INCREASE WITH MILEPOST INCREASE)

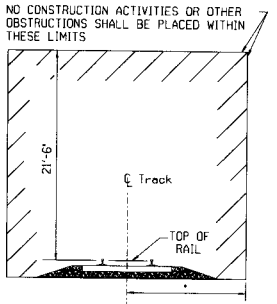
MAIN LINE			
ALIGNMENT: LEFT RAIL		ALIGNMENT: RIGHT RAIL	
STATION	ELEVATION	STATION	ELEVATION
4+00	2200.05	4+00	2200.02
5+00	2200.66	5+00	2200.63
6+00	2201.25	6+00	2201.19
7+00	2201.88	7+00	2201.86
8+00	2202.47	8+00	2202.45
9+00	2203.06	9+00	2203.03
②10+00	2203.74	②10+00	2203.73
11+00	2204.41	11+00	2204.39
12+00	2205.11	12+00	2205.09
13+00	2205.82	13+00	2205.82
14+00	2206.48	14+00	2206.46



TRACK REFERENCE DIAGRAM

FOR THE FOLLOWING INFORMATION PLEASE REFER TO THE PLAN AND ELEVATION DRAWINGS OF THE BRIDGE PLANS. THE PLAN AND ELEVATION DRAWINGS SHALL SHOW ALL REQUIRED INFORMATION PER UPRR GRADE SEPARATION PROJECTS. (PLAN NO. 711100 SHEET 2)

1. Centerline of bridge and/or centerline of project.
2. Track layout and limits of Railroad right-of-way with respect to centerline of main lines.
3. Future tracks, access roadways and existing tracks as main line, siding, spur, etc.
4. Point of minumum vertical clearance and distance, measured perpendicular, from the centerline of nearest track.
5. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.
6. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of nearest foundation below grade.
7. Horizontal spacing at right angle between centerlines of existing and/or future tracks.
8. Limits of shoring and minimum distance at right angle from centerline of nearest track.
9. All existing facilities and utilities and their proposed relocation, if required.
10. Toe of slope and/or limits of retaining wall.
11. Existing and proposed contours.
12. Railroad Milepost and direction of increasing Milepost.
13. Direction of flow for all drainage systems within project limits.
14. Limits of barrier rail and fence with respect to centerline of track.
15. Depth of foundation below bottom of tie.
16. Top and bottom of pier protection wall elevation relative to top of rail elevation.
17. Controlling dimensions of drainage ditches and/or drainage structures.
18. Top of rail elevations for all tracks.
19. Minimum permanent vertical clearance above top of high rail to the lowest point under the bridge.
20. Existing and proposed groundline & roadway profile.
21. Type of slope paving.
22. Location of deck drains.
23. Total width of superstructure.
24. Width of shoulder and/or sidewalk.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

• 15'-0" for BNSF and 12'-0" for UPRR

TYPICAL FENCE ON BARRIER DETAIL

REFER TO SHEET S-2.02 FOR GENERAL INFORMATION AND ADOT STD SD 1.04 AND SD 1.05 FOR TYPICAL FENCE ON BARRIER DETAILS

DESIGN APPROVED	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION BRIDGE GROUP STRUCTURE DETAIL
APPROVED FOR DISTRIBUTION	AZDOT RAILROAD STANDARD DRAWINGS FOR OVERHEAD BRIDGE

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION	DWG NO.
I-10	248.72	20095	INA RD T.I.	S-2.51

TRACS NO. H 8479 01C | 010-D(216)T | ___ OF ___

6:51:49 AM 4/29/2015 BENJAMEN. MOULTON K:\PHX_ROADWAY\098205001-I 10 INA RD TI\CADD\03-SHEETS\UPRR\S200955D04.DGN